



STEINBERG

SMP24



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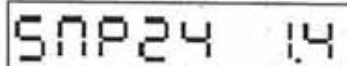
PREFACE

The **SMP 24** you have purchased is a highly complex, professional high-tech machine.

As the **SMP 24** (SMPTE and MIDI processor) is essentially software controlled we are able to adapt it to various developments and so constantly improve it.

We are always open to ideas and modification suggestions as anyone who has bought our software can tell you.

On power-up you will see the software version of your **SMP 24** (currently 1.4); you can request information on updates from your dealer, the distributor or via MMS Mailbox (GEONET 3).



To understand the variety of **SMP 24** uses both in a modern studio environment and in home recording you should read this manual attentively and carefully (to avoid misunderstandings, misuse and the resulting major headaches and loss of time).

Owners of the **SMP 24** - Version 1.3

We would like to reassure owners of the old version 1.3 that although much has been changed everything is now much more clearly structured and powerful. As you have already used **SMP 24**, you will get along much faster.

Besides, the software for direct computer editing will be immediately available free of charge after this manual is released (for ATARI ST and Commodore 64/128).

This update will show you how quickly we at **STEINBERG** react effectively to suggestions for improvement and advice from musicians.

Steinberg

SMP-24

V. 1.6 - 5/89

drawing
V1.6 4/89

There are only few obvious differences between SMP versions 1.49 and 1.6. The major change in version 1.6 is that it is now *M.ROS* compatible (version 1.49 was not). The user thus needs an SMP-24 version from 1.6 upwards to run *M.ROS* compatible programs.

In spite of this adaptation to *M.ROS* V 1.6 is compatible with Pro-24 and with all programs that were compatible with V 1.49. Nevertheless you will have to re-initialize SMP after having installed the new Eprom (press tap and start simultaneously and turn on the powerswitch).

Together with the Eprom comes a new Editor-version which now communicates via the Centronics-port (previous versions communicated via MIDI). This Editor contains a song page. It is useful only if you don't work under *M.ROS* (eg with PRO-24 or non-Steinberg software). When using *M.ROS* nothing has to be set from the SMP itself as it is controlled via *M.ROS* ie from the ATARI.

There are only few amendments in the user interface, mostly regarding the sync parameters. No changes have been made in the MIDI section of the software (ie Master keyboard functions, MIDI programs). Furthermore only a few smaller bugs have been solved and internal communication has been improved.

Version 1.6 correctly reads and writes 30 frames and 30 df (drop frames). When using 30 frames the time displayed seems to be 'wrong' compared to a stop-watch. The reason for this lies in the SMPTE norm itself. 30 df cannot be recognized by the AUto function (which analyzes 30 frames) as drop frames might under certain circumstances only be recognized after 10 minutes.

Steinberg

Following sync parameters have been added or changed respectively:

SoFS -Sync Offset-

may be used to read weak time code signals (eg older U-Matic or Home VCRs). Recommended value setting ca.6

SLiM -Sync Limit-

has no meaning anymore. The previously possible Vari-Speed range (tape speed) has been limited to +/- 20% because of the vastly improved performance.

LtiM -Lock Time-

Lock time in frames. SMP now locks in much faster (default 5 frames, ca. 0.2 seconds). Problems might arise eg when starting near the end of a PRO-24 song. In this case LtiM must be increased; meanwhile a value setting of 12 (ca. 1/2 a second) has proven to be safe.

Mtc -MIDI time code-

Previous settings were off (0) or on (1). The new version allows to set an output (1 to 4) for MTC here or switch it off (0).

route -Output Routing-

This is a precautionary measure for applications where the SMP is used without having it connected to the Centronics port of the computer and large amounts of data are involved. In this case the MIDI processor (MIDI programmes) might be in the way. Setting the parameter route to on (1) switches it off; the MIDI data will then be directly passed on from the inputs to the outputs you have set using following parameters. Data will thus not be modified nor filtered.

Out1 in [x]

Out2 in [x]

Out3 in [x]

Out4 in [x]

These parameters apply only if route is set to on (1). By setting them you can assign input 1 (1) or input 2 (2) to one of the outputs 1 to 4 or you can set the output to off (0).

Example: the setting Out3 in2 means that all MIDI data appearing on output 3 comes directly from input 2. The setting Out2 in0 means that no data will appear on output 2.

src

This parameter must be set to '2' when SMP-24 is used in connection with PRO-24 to make sure that older recordings run in sync. This parameter has no meaning when you use an *M.ROS*-compatible sequencer like CUBASE.

Important for all CUBASE users:

The SMP-24 Song function has no meaning when you use CUBASE as all Tempo informations, MIDI clock, MTC etc. are controlled via *M.ROS*. *M.ROS* itself can be controlled from the SMP via Time code information (contrary to PRO-24 which is controlled via Tempo informations). This allows to use *M.ROS*' full resolution of 384 ppq. If you want to tap in tempo information please use the Human sync option.

When used in connection with CUBASE the SMP should not be started manually anymore otherwise MIDI clocks (if activated) sent from the SMP can cause trouble: SMP's song has nothing in common with a CUBASE-(*M.ROS*) song. That is why you should disable MIDI clock outs A, B, C, D. If you want to load a PRO-24 song into CUBASE and then synchronize to an existing recording on tape, problems might arise, as *M.ROS*' tempo calculation is much more exact. It might help to change some decimals. It is probably easier to find the right tempo if you wind to the end of the song while the synchronization is running and change the tempo in the Mastertrack (which of course has to be switched on) until tape and sequencer run synchronized. If several tempo changes have been programmed in the Mastertrack this method might be too time-consuming. In this case either tap in the timing or synchronize *M.ROS* with the SMP-song via MIDI clock.

Tip:

After replacing the EPROM, please initialize your instrument as described in

LEVEL 3: 9. Initializing.

About this manual:

The manual was written to be read through at least once.

We recommend you actually go through the steps described here and manipulate parameters to get the hang of using **SMP 24**.

The keyboard assignment list at the end will help you access various functions quickly in the early stages. However, you will soon discover that the **SMP 24** is very clearly structured and the list will become more and more dispensable.

The manual is set out on "levels" like the **SMP 24** as many logically associated parameters are adjustable on different levels. Occasionally you will not be able to avoid moving through various levels; but as **SMP 24** is so user-friendly (see '3. OPERATIONS') this won't bother you much.

The section on use with Steinoerg's **TWENTYFOUR** features first as the functions required can be called from the program.

1. SMPTE IN GENERAL

Given the developments in the audiovisual arts (film and music) and the growing number of peripherals to control, it became increasingly urgent to create a standard that would guarantee compatibility and flexibility among the various media and machines.

To this end, the film industry in the USA developed a code based on time that was initially only used for synchronizing films.

Its name was derived from

Society of Motion Pictures and Television

and is "**SMPTE**" (pronounced 'SEMPY').

The European counterpart is the **EBU** time code that uses a different frame count (see below). **EBU** stands for:

European Broadcasting Union.

As we said, the time code is based on units of time and not on a fixed tempo value as in other sync signals.

The time unit is structured thus:

00	:	00	:	00	:	00	:	00
hours	:	minutes	:	seconds	:	frames	:	bits (or subframes)

The first three units are everyday, the third and fourth are a little more unfamiliar:

Frames means 'frames per second' (FpS), i.e. pictures per second.

This specifies with which resolution to record or read the time code.

The **bits** represent subunits of frames that can be used for fine adjustments when necessary.

As the various media (film/TV/video) could not agree to a norm, there are various frame modes:

24 25 EBU 30 non drop 30 drop frame

To record and read these various time codes to/from tape ('read/write time code'), machines similar to **SMP 24** were developed, but usually at a price several times higher than **SMP 24**.

A **TIME CODE SYNCHRONIZER** like ours makes it possible to set different cue points and improve tempo settings so you can start and run the machines connected precisely (i.e. synchronously).

2. DESCRIPTION

WHAT IS SMP 24?

SMP 24 stands for **SMPTE / MIDI Processor**. means that this machine is best combined with **STEINBERG's TWENTYFOUR** and that these two together provide musicians with unprecedented ease of use and immense flexibility.

So -

SMP 24 is really two machines that fit together into a 19" space-saving unit.

First, there is the **SMPTE generator** and **master synchronizer** section that can cope with (almost) any conceivable synchronisation problem and, combined with an **ATARI ST**, also provides **2 MIDI INs** and **4 MIDI OUTs**.

The other part of **SMP 24** is a sophisticated **MIDI control system** that can be used either as a **MIDI matrix** (no more tiresome replugging) or luxury **master keyboard controller** with upto 24 connectable MIDI devices, full-scale volume mix and MIDI merge. 64 memory banks are available here.

SMP 24's front panel has:

- 4 function keys
- 4 cursor keys
- 1 eight-digit 7-segment display
- 11 LEDs
- 1 power switch

The back panel has:

- 2 MIDI INs
- 4 MIDI OUTs
- 1 CENTRONICS port
- 1 SMPTE IN and OUT
- 1 SYNC IN and OUT
- 1 FOOTSWITCH connection

3. OPERATIONS

Control over all the **SMP 24** functions with only 4 function and cursor keys meant creating three different operation levels:

Level 1:	MIDI/SYNC program(s) and parameters, SMP 24 default settings
Level 2:	SMPTE and TEMPO settings
Level 3:	System settings



To move to a different level, hold down the **SHIFT** key and activate the **START/STOP** key.

The '**PROGRAM/PARAMETER**' LED above the four function keys displays the currently selected level:

Level 1:	One LED on (program or parameter)
Level 2:	No LED on
Level 3:	Both LEDs on (program <u>and</u> parameter)

Tip: You can move through the levels at any time - even during synchronization or while writing the time code.

On the first and third levels you can additionally choose between four different display modi to keep an eye on active processes; the LEDs above the display window show the currently selected display window:

- program • SMPTE
- parameter • tempo

Thus, while synchronizing you can, for example, switch between SMPTE display in time units (hours, minutes, seconds, frames) and tempo display in musical units (bars, fourths, BpM) at will; or you can peek into the currently active **MIDI** or **SYNC** program if you want to check the overall constellation:

Where is the MIDI sent, what keyboard am I using to play to the sequencer, what bar am I in now or how long is the composition so far, etc...



Switch display using the right-hand cursor keys: press either the left or right cursor key and the display and LED will jump to the next item.

As mentioned, this feature is only available on levels 1 and 3.

4. CONNECTION WITH STEINBERG's TWENTYFOUR

This configuration is interesting for anyone who wants to use SMP 24's versatile synchronization functions and additional MIDI INs and OUTs together with the full-blown recording and editing features of TWENTYFOUR for professional, creative composing, arranging and post-production.

The practical advantage of this setup is fairly obvious:

Once the two are connected, you can access many important SMP 24 functions from TWENTYFOUR.

Moreover, all start and cue points, tempo settings and other parameters can be saved to disk with the song or dump utility.

INSTALLATION

Connect SMP 24 to the ATARI ST printer port with the Centronics cable.

Switch on SMP 24 first and then the ATARI; if you now load TWENTYFOUR, SMP 24 will tell you with a single beep that the link between program and computer is established.

Note:

You have to switch on SMP 24 before loading TWENTYFOUR as otherwise the devices do not link up.



Once TWENTYFOUR is loaded please switch the program to external synchronization ("Sync: ext.") so the ATARI MIDI connections are switched off and SMP 24 MIDI's are activated. Otherwise, you will not be able to open the 'SMPTE' window in the 'MIDI' window.

A few remarks about SMP 24's MIDI features:

- The SMP 24 MIDI OUTs are paralleled, i.e. if assigned accordingly various MIDI data can be sent simultaneously to outputs (e.g. 4 x 16 MIDI channels = 64 MIDI channels).

This optimization means that MIDI delays can only be caused by overlong MIDI cables to devices.

- Connecting via the Centronics port also enables the advantage of higher sequencer resolution when synchronizing.

The MIDI clock is designed for synchronization with a resolution of 24 impulses per quarter (PPQN: parts per quarter note).

By contrast, a resolution of 96 PPQN is feasible with the Centronics port. This enhanced accuracy is noticeable, for example, in finer delay settings that synchronization with the MIDI clock would otherwise not allow owing to its coarser resolution.

- Both SMP 24 MIDI INs are automatically merged so you can play on any two MIDI keyboards.

Notes:

- If TWENTYFOUR is set to 'ext.' synchronization then the ATARI MIDI sockets are inactive. If you want to use them - e.g. for the dump utility - you first have to set TWENTYFOUR back to 'int.'.

- The SMP 24 MIDI processor is inactive in the TWENTYFOUR setup as MIDI OUT assignment is performed with the parameter 'Ot Channel'. SMP 24 is unlocked again when the program is set back to 'int.'.

- The default setting is for a MIDI clock at MIDI OUT 4.

You can change this at any time via SMP 24 (see LEVEL 1: 'The Sync parameters').

On the following pages we will first explain the menu options '**OUT CHANNEL**' and '**SMPTE**' and then give you a typical synchronization example.

OUT CHANNEL

When you click on this parameter a window opens enabling very easy configuration of the entire MIDI setup and overall control.

As the MIDI OUTs can be addressed separately, you now have 4 x 16 MIDI channels available which means that, if required, you can connect and control more than 16 devices.

PROCEDURE

First assign a MIDI channel to the tracks by clicking on the values under '**Midi-Ch.**':

left mouse button -> decrease
right mouse button -> increase.

The adjacent columns allow you to set each track to one, two, three or all four **SMP 24** MIDI OUTs. This means maximum flexibility and ease of use as MIDI routing can be controlled from **TWENTYFOUR**.

Assign a track to an output by clicking on the columns under '**Out-Setting**'.

An inverse (black) box shows you that the track is assigned to that output.

Hint:

If you use a permanent setup, it's worth saving the settings and assignments to '**DEF.SNG**' so the right constellation is immediately available when the program is loaded.

SMPTE

This enables you to control **SMP 24** during SMPTE synchronization from the program.

On this page you can specify upto 16 different cue points, recompute from bar position to time (or vice versa), select the various cue or frame modes, read in the **SMP 24** song or command **SMP 24** to write a time code.

Moreover, these settings are saved with each song which means you can collect special, recurring constellations in a kind of small library.

SETTING AND RECALLING THE CUE POINTS

You can specify start and cue points either as time units or 'musically' in bars.



To enter values use the ATARI backspace, escape, number and cursor keys.

If you enter the cue point as a bar you first have to click on 'Get Cue' so the program computes this position in time units.

A few examples:

Use the cursor keys to scroll to the required cue point and enter these times, for example:

- a) << |Start| |Cue: 00:00:02:00:00| >>
- b) << | 2 | |Cue: 00:00:06:00:00| >>
- c) << | 3 | |Cue: 00:00:34:00:00| >>

As bar its and time units act in proportion to each other, these are the corresponding bar numbers:

	Tempo 120	Tempo 96	Tempo 150
a)	1/1/0	1/1/0	1/1/0
b)	3/1/0	2/4/0	3/3/0
c)	17/1/0	14/1/0	21/1/0

The recalled cue points are sent immediately to **SMP 24**.

SELECTING FRAME AND CUE MODES

Simply click on the required value. (See also 'The Sync Parameters' and 'SMPTE IN GENERAL'.)

The default setting is:

Frame mode: 25 FpS
Cue mode : Tape sync

Notes on working with cue start or tape sync mode:



- As long as **SMP 24** receives no SMPTE code, you can work as usual with **TWENTYFOUR**.

You can use the play and stop keys of both **TWENTYFOUR** and **SMP 24**.

- **TWENTYFOUR**'s tempo display is not active in these modes; only parameters on the mastertrack will be used.

FREE-RUN MODE

In **FREE-RUN** mode external synchronization is not possible; you can adjust the tempo as always on the main page.

This mode allows you to disable reaction to time code signals and still exploit the antages of the 4 MIDI OUTs and the drum machine synchronization function.

GET SONG

With 'Get Song' **TWENTYFOUR** recalls the song (e.g. when tapping in the tempo) from **SMP 24** and reads it onto the master track.

WRITE SMPTE

Clicking on this option makes **SMP 24** write the SMPTE time code.
Clicking again on this option makes **SMP 24** stop the SMPTE writing.

SYNCHRONIZING WITH SMP 24 AND PRO TWENTYFOUR

1. First you have to record the SMPTE time code on tape.

If there is already an SMPTE track on tape, you can jump this step and the next.

Connect the **SMP 24 SMPTE-OUT** with your tape machine input.

It's best to use one of the outer tracks; adjust the level to about 0 db. (In view of the sometimes high crossalk to adjacent tracks you could try a lower level of between -3 and -6 db.

It's just important to get the **SMP 24** to lock properly later. It is worth a few trial attempts to find the right level.)

Please make sure that there is no signal on the adjacent track with high peaks (e.g. snare drum or hi-hat) as this might cause damage to the SMPTE track.

2. Switch off all noise suppression and start the tape machine.

A moment later, click on the 'Write SMPTE' field in the SMPTE window. The **SMP 24** now sends the time code, as you can see on the display.

The time code should be recorded for at least 30 seconds longer than the actual length of the composition to leave room for later improvements.

3. If you then want to synchronize **PRO TWENTY-FOUR** with tape or video, connect the tape machine output or the video recorder audio output with the **SMP 24 SMPTE IN** socket.

Then select a frame and cue mode in the SMPTE window.

If you have recorded the default time code (25 FpS) you need change nothing else.

If you already had an SMPTE track on tape and cannot remember the number of frames, **SMP 24** allows you to select 'Auto' mode in 'Sync Parameters'.

The recorded frame mode is identified and **SMP 24** is adjusted accordingly.

4. Now enter the start and cue points.

The start point specifies the time at which the **SMP 24** start and clock signals are to be sent to the connected sequencer and drum machine ('ENTER AND RECALL CUE POINTS').

5. With the last setting you determine the sync mode for the **SMP 24**:

For simple synchronization to tape the best choice is 'TAPE SYNC'. **PRO TWENTYFOUR** then starts at the specified start point.

If you want to set in at various points in the piece with various cue points, activate cue start.

6. Use the cursor keys to switch to SMPTE display mode.

As soon as the **SMP 24** receives the 'SMPTE' code you will see the LED next to 'SMPTE Lock' light up and **SMP 24** start.

Once the start and/or cue point specified is reached, **PRO TWENTYFOUR** starts. If the LED display flickers it could be that either the SMPTE code has a bad level again or is damaged.

Although **SMP 24** has a high tolerance, it can still happen that the timecode on tape is so badly damaged that **SMP 24** can no longer generate it.

In the first case you should readjust the level from a mixer (increase level and frequency by 2 kHz) or, in the second case, re-record the timecode, if still possible.

TEMPO SETTINGS

The tempo and time signature are set in tape sync and cue start mode in **PRO TWENTYFOUR's 'Mastertrack'**, unless you want to use the **SMP 24** song tapped in tempo.

To do so click on the **'Get Song'** field in the SMPTE window; all **SMP 24** tempo settings will be adopted by the master track immediately.

In free-run mode the tempo can be adjusted as usual on the main page.

MISCELLANEOUS

REBOOTING SMP 24

After a crash or after switching off the machine you can reboot **SMP 24** either in the 'Sync' field (by repeatedly pressing until 'ext.' reappears), or using the **PROGRAM/PARAMETER** key on **SMP 24** Level 3 (you hear a short beep).

SAVING SMP 24 DATA

With a song:

There are two ways to save **SMP 24** data with **PRO TWENTYFOUR**.

The first way is to save the selected start and cue points, frame and cue modes and 'Out Channel' assignments with each song to disk, as usual.

Using the dump utility:

The other way is to save and load all **SMP 24** data with the dump utility. However, for this you can only use the ATARI MIDI ports and **SMP 24** **MIDI IN/OUT 1**.

After activating the dump utility, simply click on **MIDI-REQUEST** and the **SMP 24** display will say 'SENDING' and send its data to **PRO TWENTYFOUR**.

Loading is as usual by clicking on **MIDI-SEND**. **SMP 24** acknowledges receipt by displaying 'Receive'.

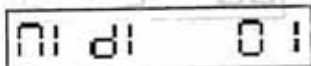
THE DUMP UTILITY

MIDI dumps via the dump utility are sent as before via the MIDI interface. First, let us take a close look at the different levels:

LEVEL 1 SYNC PARAMETER

1. SYNCHRONIZING WITH SMP 24

After switching on the device, the display shows:



The 'PROGRAM/PARAMETER' LED tells you are on Level 1 (1 LED lights up).

On this level you have the choice between **MIDI** and **SYNC** programs and parameters.



To access the **SYNC** program press-hold the **SHIFT** key and press the 'PROGRAM/PARAMETER' key; this is how to switch between the **SYNC** and **MIDI** sections.

There is only one **SYNC** program.

It contains all **trigger parameters** as well as some **SMP 24 default settings** which we will come to later.



By pressing the 'PROGRAM/PARAMETER' key again, you activate **Edit mode** and can now scroll through the parameters using the first two cursor keys (down and up).

Values are always changed with the second cursor pair (left and right).

Key assignment in program mode:

TAP & PROGRAM/

PARAMETER: Switch between MIDI and SYNC section

PROGRAM/

PARAMETER: Edit mode

Cursor Up/Down: Select MIDI programs

Cursor Left/Right: Select display mode

Key assignment in Edit mode:

As above, except:

Cursor Up/Down: Select parameters

Cursor Left/Right: Change values

THE SYNC PARAMETERS

Explanation:

Display

tr 9 00

Meaning Trigger source

Values 0 TAP button
 1 Footswitch
 2 Clock/trigger In
 3 MIDI-Clock to MIDI IN 1
 4 MIDI-Clock to MIDI IN 2
 5 FSK
 6 Note In to MIDI IN 2

This parameter enables you to synchronize **SMP 24** from an external trigger.

Use this feature, for example, to record an SMPTE code to tape later. **SMP 24** takes the selected trigger source and orients its song to it (tempo sequence).

Now you can use all the advantages of the time code, send all sorts of sync signals and have the timing stick close to the tape. The external trigger can be an audio signal, a MIDI note event, a footswitch or the built-in TAP button.

0 TAP button

Use the TAP button, if you have no regular trigger source (e.g. a clock, MIDI clock, HH, BD), to tap in the tempo with all device fluctuations and irregularities.

1 Footswitch

Select the footswitch option to tap in the tempo 'by foot' instead of with the TAP button.

Many foot-switches are sadly unsuitable for this as they bounce. In other words, they send more impulses than are actually given at the switch. Check your footswitch for this.

2 Clock/trigger In

This setting allows you to use any of the usual clocks or any audio signal (e.g. bass drum, snare, hihat, etc.) as a trigger source.

3 MIDI clock to MIDI IN 1

This is where to decide to send a MIDI clock to **SMP 24 MIDI IN 1** as trigger source.

4 MIDI clock to MIDI IN 2

The MIDI clock mentioned above has to be at MIDI IN 2 in this case.

5 FSK

With this set, the trigger source is an FSK signal at the Sync-socket that cannot be reconverted to MIDI clock.

6 Note In

Use this instead of the TAP button, for example to use the key of a keyboard or a MIDI drumpad as trigger source.

However, the MIDI event should only be sent to **MIDI IN 2**.

Display

tr rt 01

Meaning Trigger rate

Value 1 - 254

The trigger rate specifies the number of triggers per quarter note that SMP 24 has to observe.

Setting	means
1	quarter notes
2	eighth notes
3	eighth triplets
4	sixteenth notes
6	sixteenth triplets
8	32nd
12	32nd triplets
48	24 impulses per quarter
96	48 impulses per quarter
192	96 impulses per quarter

Display

note 60

Meaning

Note number

Value

00 - 127

This parameter determines the note number sent with the trigger if you selected trigger source '6'.

Display

co r t 04

Meaning

Clock out rate

Value

0 - 254

This specifies the impulses per quarter (i.e. the clock) to be sent to the SMP 24 clock output.

The clock is the product of dividing 192 by the value entered here.

Clock out value	value to enter
192	01
96	02
48	03
24	08
4	48
1	192

Of course all intermediate values are possible.

To get **DIN SYNC** (e.g. Roland drum computer) set value 08 and insert a stereo jack into **SMP 24** clock out.

Note:

The clock is on the tip of the stereo jack and the start/stop signal on the shaft.

Display

6.05 04

Meaning

Time signature

Value

1 - 254

This parameter sets the numerator for the time signature; value 04 (default) corresponds to 4/4 time signature, 03 corresponds to 3/4 signature, 06 to 6/4 signature, etc...

Display

Metron 01

Meaning

Metronom

Value

0 = Off
1 = On

This turns the **SMP 24** metronome on or off.

Display

Mode 01

Meaning

Cue mode

Value

0 = On or tape sync
1 = On or cue mode
2 = Off or free run

If you set this to 0 you activate tape sync mode and SMP 24 starts all connected devices at the programmed start time. This is the setting for normal tape synchronization.

Cue mode is a special kind of tape sync; SMP 24 will only start at the programmed cue points. This mode is suitable for working on a particular section in the piece (e.g. start of a refrain or just the bridge).

Otherwise (i.e. in free run) the devices are controlled with the SMP 24 START/STOP button, i.e. independently of special cue times.

Display

FRAME 01

00 3.02

Meaning

Frame Mode

00 3.03

Value

0 = Off (no frame advance)

0 = 24 frames F.p.S (frames per second)

1 = 25 frames F.p.S

2 = 30 frames F.p.S

3 = 30 frames drop frame F.p.S

This parameter specifies the number of frames (pictures) per second with which to read or write the SMPTE time code.

Display

Sb. t 00

cb. t 00

Meaning

Start bits or Cue bits

Value

0 - 79

Use this parameter when you need to edit the start or cue time in highest resolution.

Display

out b 00

00 272

Meaning

MIDI clock out

Values

0 = Off

1 = On

This function sets a MIDI clock with information about

Song position pointer, start/stop/continue

to one or more SMP 24 MIDI OUTs.

You should only set this when necessary as when you use SMP 24 as a MIDI processor fluctuations can occur at the corresponding MIDI OUTs (the MIDI clock data do not overstrain a MIDI bus).

When using an ATARI and the Centronics port, however, this presents no problem.

By default, the clock is set to MIDI OUT 4.

Display

Src 00

Meaning

SMPTE mode SRC/SBX

Values

00 = SMP 24 mode
01 = Friendship SRC mode
02 = Roland SBX 80 mode

As problems can arise with previously recorded SMPTE codes (generated by other devices) this allows you to adjust SMP 24 accordingly.

Due to the high resolution of SMP 24 a displacement can occur with respect to the SBX 80 and SRC with the same tempo.

Display

Auto 00

Meaning Auto frame

Values 00 = Off
 01 = On

If you switch this parameter on, SMP 24 will identify the frame count of the existing time code.

PRACTICAL EXAMPLES

1. RE-SYNCHRONIZING AN OLD RECORDING WITH SMPTE

Let's assume you have an old recording that you now want to rework with the SMPTE time code to add that little extra something to your old composition using sequencer overdubs, for example. (Imagine Hot Chocolate's "You Sexy Thing" or "Everyone's a Winner" improved by sample horns and modern drum sounds and on its way up the charts!)

Or perhaps you just want to SMPTE-'upgrade' the recordings you made with sync to tape signals to enable more flexible improvements with SMP 24.

Last but not least, SMPTE is also capable of professional video and film synchronization.

1. First record the **SMP 24** time code to tape (see Section 1).
2. Then select the trigger source (e.g. a clock pulse, a MIDI-clock, a FSK-signal, a continuous hi-hat, bass drum, eighth bass, etc... or the TAP button).
3. Tune **SMP 24** to the trigger source with the trigger rate.

If, for example, you have an old **Pro16** (or **SEQUENTIAL 'DRUMTRAKS'**) clock on tape and want to use it as trigger, you have to set the trigger rate to 96. (The real rate, however, is 48 PPQN; as **SMP 24** reads each edge of the signal for accuracy's sake, the trigger rate is double.)

Note: If you select the **TAP** button or footswitch as trigger source the incoming signal will not be counted double; this means that you have to set the trigger rate to 2 (and not 4) if you want to tap in eighths.

4. Finally, switch the **SMP 24** to ready to record with the **REC/PLAY** button (on Level 2); the LED responds accordingly and the display jumps to Song Edit (Tempo LED lights up).

The point at which **SMP 24** receives the first trigger, is memorized as the start time.

On the display with the small point and the tempo to trace recording of tempo data in bars as the '**SMP 24 Song**'.

Tip: For more accuracy when setting the tempo with the **TAP** button, footswitch or clock pulse halve the tape speed.

As you have already recorded the time code and **SMP 24** is controlled by this code during the trigger process, it will register the change in tape speed and treats the trigger source (e.g. **TAP** button) as if it came at the original speed.

2. SMP 24 AS MASTER SYNCHRONIZER VIA A MIDI SEQUENCER AND WITH A DRUM COMPUTER BOTH WITH AND WITHOUT MIDI PORT

Set the devices to synchronize to external sync.

Now you can, for example, send a MIDI clock via **SMP 24** MIDI OUT 1 with all the start, stop, continue data to the sequencer and send a MIDI clock via MIDI OUT 2 to the drum computer.

This double connection via separate MIDI OUTs has the advantage that MIDI information arrives simultaneously at both devices without delay (in contrast to a traditional MIDI THRU setup).

SMP 24 is also excellent for integrating 'old' drum computers into a standard MIDI setup.

Take, for example, the world-famous Tr-808 or the Oberheim DMX, both of which have no MIDI IN but still ought to be usable for composing and thus need sync devices.

Connect **SMP 24** clock out with the drum machine clock in. Check the list of values under clock out rate for the right clock to send to your drum computer.

If you now activate **SMP 24 START/STOP** the connected devices will start (or stop) and run at the tempo specified in '**SMP Song**' (see section on 'Tempo Edit').

THE SMP PARAMETERS

After going through the **SYNC PARAMETERS** you will hit on a few empty options (15 -31) which you should not worry about.

There then follow 12 parameters which we have called '**SMP parameters**' as they manage the default **SMP 24** settings.

These settings specify, for example, MIDI transmission speed, footswitch assignment or **SMP 24** program change.

These settings are also active when using **SMP 24** together with **TWENTYFOUR**.

Note:

As these are basic settings for the entire **SMP 24** MIDI section any changes should be made with forethought and carefully.

You can imagine the confusion in your setup if you double the MIDI speed, for example.



Think of the empty parameter options (15-31) and (44-63) as position markers showing you where you are when scrolling quickly through the **SYNC** and **SMP** parameters.

And now the parameters:

Display

Foot 00

Meaning

Footswitch setting

Values

- 00 = program up
- 01 - 14 = correspond to keyboard
- 01 - 07 = keys from left to right
- 08 - 14 = SHIFT pressed with keys from left to right

Use this parameter to assign any keyboard function to the footswitch.

You will soon notice that this feature makes it very easy to use SMP 24.

Example:

Level 1

Setting

00 switches the SMP 24 MIDI programs through; with

01 you can start or stop a sequencer (TWENTY-FOUR) or drum machine with the footswitch, with

07 switch between display modes, with

08 move through levels, with

10 switch between MIDI and SYNC sections, with

12 move through the devices when MIDI programing, etc...

As you can see, there are no limits to your imagination and you can try out variations on the other levels, too, until you have found the best combination of footswitch and keys.

Display

Pc i n 00

Meaning MIDI IN for program change

Values
00 = receive no program change
01 = MIDI IN 1
02 = MIDI IN 2

Use this parameter to decide whether to receive program changes and if so on what SMP 24 MIDI IN.

Display

Pc ch 00

Meaning MIDI channel for program change

Values 00 = all MIDI channels
01 - 16 = channel 1 - 16

This specifies the MIDI channel on which **SMP 24** reacts to a program change of an external device.

You can scroll MIDI programs from 1 to 64; a higher choice than 64 causes **SMP 24** to start at 1 again.

Display

[-St A 01]

Meaning

MIDI OUT 1-4 running status

Values

00 = Off
01 = On

The running status is a faster transmission mode for MIDI data transfer which omits superfluous status bytes as long as the status is not changed.

You should only change this parameter if you are having major receiving problems with one of your devices and if the problem definitely does not originate from the running status. (Older synthesizers often do not 'understand' this MIDI command, e.g. Siel.)

Display

MTC 00

Meaning

MIDI TIME CODE

Values

00 = Off
01 = On
02 = Fulltime message off

The **MIDI TIME CODE** is a time code that has a coarser resolution than **SMPTE** but is finer than **MIDI SONG POSITION POINTER**.

In the future, **MIDI TIME CODE** will be used increasingly for mixer automation.

Setting 02 disables transmission of fulltime messages.

Note:

The MTC is only sent on MIDI OUT 4.

Display

F P o! 00

Meaning

Footswitch polarity

Values

00 = +
01 = -

Use this to adjust your footswitch to SMP 24. If, for example, SMP 24 is not reacting to pressing down your footswitch but to releasing it, then solve the problem by changing the polarity with this parameter.

This feature enables you to adapt to the various footswitches available on the market.

Display

S Pol 00

Meaning

Start/Stop clock out polarity

Values

00 = +
01

Use this to reverse the polarity of the Start/Stop signal, when synchronizing Clock Out.

Display

beep 00

Meaning

keyboard click

Values

00 = Off

01 = On

The 'beep' sound you hear when you press a key can be turned on or off here.

check

Display

SPEED 00

00 933

Meaning	Transmission speed (31,15/62,30 baud)
Values	00 = 31,15 baud (standard) 01 = 62,30 baud (dumps, etc.)

Some samplers, MIDI devices and future developments allow you to double the MDI transmission speed to enable fast data transfer. This is covered by this option.

Note:

In a 'normal' MIDI setup you should definitely leave the baud rate at 31 as the connected devices might otherwise crash.

"MIDI-FYING" WITH SMP 24

We now come to what is really a 'second' separate device - the **SMP 24 MIDI processor**.

It allows you to use **SMP 24** as a complete MIDI routing system or even as a sophisticated master keyboard controller.

The basic features that **SMP 24** provides are:

- two mergeable MIDI INs (MIDI merge function)
- four variously configurable MIDI OUTs
- modifications are output in real time and are thus immediately controllable.
- upto 24 MIDI devices with various filters, split settings and programable volume can be connected.
- 64 memory banks to store all information.

Note:

The MIDI programs are inactive if you run **SMP 24** via the Centronics interface with the **PRO TWENTYFOUR**.

THE BASIC IDEA

You should go to Level 1 (1 program/parameter LED lights up).



Press and hold **SHIFT** and use the **'PROGRAM/PARAMETER'** key to switch from **'SYNC'** to **'MIDI'**.

You can now select one of 64 programs with the first pair of cursor keys.

Note:

The moment you select a new MIDI program, all channels, all MIDI OUTs are sent an **'ALL NOTES OFF'** and an **'OMNI OFF'** command and all selected parameter values. The **'ALL NOTES OFF'** commands are to prevent any 'hanging notes' (Note On without Note Off) or any pressed sustain pedals when switching over.

When fast scrolling through MIDI programs these data are only sent once you release the key.

To recall the individual parameters simply press the **'PROGRAM/PARAMETER'** key.

The monitor displays:

The reason for this is as follows: You can control up to six different defined ranges and MIDI devices on each MIDI OUT.

These ranges can have various split points, transpositions, volume settings, program changes, filter settings, etc.

The first digit in the display indicates the MIDI OUT, the digit after the decimal point is the device and then comes the parameter with its setting. The parameter settings are selected and changed, like the sync parameters, with the cursor keys.

To switch from one device to another, you can either go through the parameters listed on the next page or jump more directly to the next device by holding down SHIFT and scrolling with the first cursor pair through the devices.

CURSOR UP/DOWN = choice of parameter
CURSOR LEFT/RIGHT = change setting
SHIFT & CURSOR UP/DOWN = direct selection of device

Displays:

<1.1 parameter,setting>, <1.2 ...>, <1.3 ...>, ..., <1.6 ...>,
 <2.1 ...>, <2.2 ...>, ..., <2.6 ...>,
 <3.1 ...>, <3.2 ...>, ..., <3.6 ...>,
 <4.1 ...>, <4.2 ...>, ..., <4.6 ...>.

A device setting is made up of:

play configurations:

in = MIDI IN assignment
 ic = Input channel
 oc = Output channel
 Pc = Program change
 LE = MIDI Volume (level)
 tr = Transpose
 SL = Split lower
 Sh = Split higher

Filters:

nof = Note-Off
 non = Note-On
 AFt = Aftertouch (channel pressure)
 con = Controller
 Pch = Program change
 PoP = Poly pressure
 Pit = Pitch wheel
 SYS = System exclusive

Note:

All changes you make to the above MIDI parameters are adopted and saved immediately by the active program, i.e. there is no save procedure as in normal synthesizers (edit program, disable memory protect, save new program - done). This speeds up editing MIDI programs.

Besides, **SMP 24** has two copy functions that can help you configure a MIDI setup:

Copy Single Program

This function copies a MIDI program to another program slot.

Example:

You want to copy program 01 to program 02.

1. Once you have selected program 01 press the **LEFT CURSOR** key with the **SHIFT** key. A short beep acknowledges your action. The source (program 01) is stored to a buffer.

2. Next you select the destination (in this case Prg. 02) with the **CURSOR UP/DOWN** keys.

3. And now you actually copy. Press the **CURSOR RIGHT** key with the **SHIFT** key. You hear a beep again. If you then go to Edit mode and compare the parameters of prg. 01 and prg. 02 you will see that they have the same settings:

the program has been copied!

Copy To All Programs

As a permanent MIDI setup is usually used some parameters (e.g. output channel, MIDI IN) will often have the same settings in various programs.

This is a special copy function that copies all your default settings to all other programs, thus dispensing with tiresome manual copying. This function, which is not used very often, is accessed on the third level.

Example:

You want to transfer the settings in program 01 to all other programs.

1. First select the program to copy and store it as above as source in the buffer (SHIFT and CURSOR LEFT).

2. Now go to level 3 (2x SHIFT and START/STOP) and press SHIFT with CURSOR UP. You will be asked to confirm ('ASSURE') which you do by pressing START/STOP.

A moment later you will see how SMP 24 copies the source program to all others in a flash. Done!

In the following explanation of parameters we will always use one example: the first MIDI OUT with the first device, i.e.:

	MIDI OUT	Device	Parameter	Setting
<	1	.	1	>

Off we go:

The MIDI parameters

Display

1.1 in 01

Meaning

MIDI IN

Setting

00 = no input
01 = MIDI IN 1
02 = MIDI IN 2

This parameter specifies whether any and which MIDI IN is used to input MIDI data to the device.



All devices which you don't use should be on 00.

Display

11 1c 01

Meaning

Input channel

Setting

00 = OMNI MODE (receives on all channels)
01 - 16 = POLY MODE (receives on selected channel)

This parameter sets the **SMP 24** input channel. A setting larger than 00 makes the parameter act as a 'channel filter' and it only lets the selected channel through.

Display

11 oc 01

10 5 11

Meaning

Output channel

Setting

00 = Input channel is passed through
01 - 16 = Input channel is switched to the
selected channel

This specifies the MIDI channel to which the device is directed.

display

11 Pc 01

00 01 12

Meaning

Program change

Setting

00 = No program change

01-127 = program change 0 - 126

Use this parameter to specify which program your device should be switched to. Please remember that some synthesizers start at program 00, so the setting has to be translated accordingly.

Setting Pc 01 synthesizer 00

Setting Pc 02 synthesizer 01

Setting Pc 100 synthesizer 99

etc ...

Display

11 LE 00

10 59 11

Meaning

MIDI volume

Setting

00 = no volume level sent
01 = lowest volume level
127 = highest volume level

This parameter sends a MIDI volume control command to your devices (control 7). Most synthesizers should understand this command by now. If you are not sure check the MIDI implementation of your synthesizer.

Display

11 tr 00

Meaning

Transpose

Setting

00 - 127 = raise note number
.00 - .126 = lower note number

This transposes the incoming data in halfnote steps upwards or downwards. The negative settings come after 127.

For example, to transpose a melody one octave higher enter 12.

If you want to transpose a bass line two octaves lower enter .24.

Display

11 SL 00

Meaning

Splitpoint lower

Display

11 Sh 127

Meaning

Splitpoint higher

Setting

0-127 = number corresponds to MIDI note numbers

These two parameters are used to assign another keyboard range to a device.

The splitpoints as it were split up the transmiss range of the keyboard; everything above splitpoint higher and below splitpoint lower is not passed on to the device.

In the default setting SL 0, Sh 127 there is no splitpoint.

Note:

Please note that when the lower splitpoint is above the other no notes are transmitted.

Right?

FILTERS

One can generally say that the following parameters filter out or let through certain MIDI events (depending on the setting which is adjustable for each device!).

Thus we will dispense with a more detailed description of each parameter and instead give a few practical examples at the end of the list.

Display

1 1 noF 0

Meaning

Note OFF

Setting

0 = On
1 = Off

Display

1 1 noN 0

Meaning

NOTE ON

Setting

0 = On
1 = Off

Display

1.1 Aft 0

Meaning

Aftertouch

Setting

0 = On
1 = Off

Display

1.1 con 0

Meaning

Controller

Setting

0 = On
1 = Off

Display

1.1 Pch 0

Meaning

Program change

Setting

0 = On
1 = Off

Display

1.1 P_oP 0

Meaning

Poly pressure

Setting

0 = On
1 = Off

Display

1.1 P_it 0

Meaning

Pitchwheel

Setting

0 = On
1 = Off

Display

1.1 SPS 0

Meaning

System Exclusive

Setting

0 = On
1 = Off

PRACTICAL EXAMPLES

LIVE

1. SMP 24 AS A MASTER KEYBOARD CONTROLLER

SMP 24 has a feature enabling you at last to create an allround MIDI live setup, at the same time exploiting a great many MIDI implementations usefully so you can concentrate on the fun of making music.

Let's take the example of an input keyboard, analog synthesizer, 4 digital synthesizer and 2 MIDI-capable effect devices.

What used to happen when dealing with this heap of equipment was:

- a. You were constantly busy switching over devices, twiddling volume controllers or stumbling over various foot-pedals to find the right setup for the bridge from the strophe to the refrain.
- b. Perhaps you avoided this whole rigmarole to start with, simply stuck to one sound setup and set the digital modules to power sound and the effect devices to medium reverb. But then that's not all the instruments are capable of.
- c. You bought a master keyboard (or a master keyboard controller) which, however, only satisfied a fraction of your needs (too few devices supported, too few buffers, etc.).
- d. Any hanging notes drove you up the wall...

e. And then how many times have you thought:

Perhaps I should learn to play the guitar?...

Keep cool, none of this will happen with **SMP 24** as it can manage these problems and more.

As you can see from the number of MIDI parameters, we have accounted for a fair number of useful functions; for example:

- You can perform a complete volume level mix for your synthesizer. As you can assign a specific level (**LE**) to each device per MIDI program, you will always have the right balance of levels.

- Resetting various devices during specific transitions in the music is unnecessary. **SMP 24** does it for you (**Pc**).

You only need to reset one device which you can do easily either with the footswitch (footswitch setting), a program change at your input keyboard (**P in**; **Pc ch**) or direct via **SMP 24**.

- The filter functions allow you, for example, to accept pitchwheel data (**Pit**) in the right keyboard range (using a split keyboard) to play a solo with a chord in the left range.

Or you want to stop transmission of aftertouch data to the analog synthesizer. Simply filter them out from the device.

- At every program change, **SMP 24** sends an All Notes Off command to all devices on all 4 MIDI OUTs and all MIDI channels so no hanging notes occur.

If a problem arises nonetheless here, use our built-in '**Panic**' button that sends the same All Notes Off command: go to level 3 and press the cursor up key.



Set the foot-switch to all-notes-off (panic button)

STUDIO OR HOME RECORDING

2. SMP 24 AS REMOTE CONTROLLER FOR MIDI DEVICES

Apart from the MIDI clock information you can use to remote control drum machines etc., the MIDI parameters provide a few other control features.

As you know, changes to these parameters are sent in real time.

This means you can, for example, send program or level changes to your various devices from the **SMP 24** without going to the devices themselves.

3. MUTING AND LEVELS

Perhaps you will find it useful that **SMP 24** can save specific volume levels in your MIDI setup in various programs and keep them on call. Simply assign the devices a different level for each program:

Example:

Program 01:	all device levels to 127 (full volume)
Program 02:	all levels to 64 ('half steam')

4. MIDI MERGE

The MIDI INs can be used very simply for a MIDI merge.

Example: You are using a MIDI sequencer and want to input both via a synthesizer and the 'good', balanced keyboard of a MIDI-capable E-piano.

Until now this could only be done by constantly reconnecting the sequencer input.

The setup would look like this:

Synthesizer	E-Piano
MIDI IN 1	MIDI IN 2
MIDI OUT 1	
device setting	
sequencer	

This is what to do:

1. Connect keyboards 1 and 2 to SMP 24 MIDI IN 1 and the sequencer to MIDI OUT 1.

2. As you are only using the first MIDI OUT, we are only interested in its parameters and the first two device assignments (The 1 before the decimal point, Display <1.n..Param..x>)

3. Switch the MIDI IN (in) parameter for device 1 to 01 and device 2 to 02. You have now set both MIDI INs to one MIDI OUT.

4. Now all you need to do is to specify the output MIDI channel (e.g. 1) with Output Channel (oc) and then you're all set to play in from both keyboards.

Remember:

You still have four free devices on this MIDI out and three more MIDI OUTs available. You can use them to address other modules, for example, or to include another device in MIDI merge via another MIDI OUT.

5. MIDI MATRIX

This is how to use **SMP 24** as a **programmable MIDI MATRIX**. Specify a program for every configuration needed.

You can forget about all parameters **except** MIDI IN (**in**), Input Channel (**ic**) and Output Channel (**oc**). (If you want to, however, you can of course adjust various fine or level settings.)

6. STACK MODE

As one can expect of a MIDI processor, **SMP 24** is capable of multiple transmission of incoming data.

This ability is used by stack mode to enable you to create functions of old analog synthesizers (e.g. chord memory, unisono) or layered power sounds. In the following examples we always assume you have one keyboard on MIDI IN 1 and a device on MIDI OUT 1.

Of course, you can use the other MIDI INs and OUTs in any constellation.

a. Chord Memory:

This feature enables you to assign a chord with upto six voices to one key. Set the output channel of all six devices to the input channel of your connected synthesizer.

Use Transpose (**tr**) to set the intervals to the root:

C major 7/9

root repeated 1 octave lower

device 1	tr 00	root
device 2	tr 04	major third
device 3	tr 07	fifth
device 4	tr 11	major seventh
device 5	tr 14	major ninth
device 6	tr.12	octave lower

A minor 475

device 1	tr 00	root
device 2	tr 03	minor third
device 3	tr 05	fourth
device 4	tr 07	fifth
device 5	tr 10	minor seventh
device 6	tr 14	major ninth

Fifths multiple octave transposition

device 1	tr 00	root
device 2	tr 07	fifth
device 3	tr 12	octave higher
device 4	tr 19	fifth octave
device 5	tr 12	octave lower
device 6	tr 07	fifth lower

b. Unison: Use this to assign the same note sixfold to one key.

The ensuing minimal MIDI delay creates a flanging effect and is particularly useful for solo sounds.

Device 1 - 6 tr 00

c. Power pay: Depending on your synthesizer's number of voices, you can achieve a doubling or octave doubling of what you normally play by doing the above but using less devices (every additional device halves the number of your synthesizer voices). Most suitable is a 16-voice synthesizer (e.g. DX 7, D-50) as you will still have four voices when you double four times.

The quickest way to deactivate a device is by setting MIDI IN (in) to 00.

There are many other uses of this kind. It's best simply to try out everything and enjoy the new sounds! This should give you some idea of the enormous versatility and creativity that the MIDI features enable. Now at last you can pull all the MIDI stops!

LEVEL 2

THE SMP SONG

So far we have really only considered Level 1 and its functions.

Now it's time to deal with Level 2.

This is where the time and tempo values need for synchronization are edited, saved and called.

The modes on this level are **TIME EDIT** and **TEMPO EDIT**. They are closely associated as both deal with the timing of the piece and the synchronization required; so this is the SMP song.

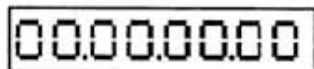


By pressing the **PROGRAM/PARAMETER** key you can switch between **TIME** and **TEMPO EDIT**.

The LED display will switch accordingly between **TEMPO** and **SMPTE**.

TIME EDIT

When you get to level 2 (press **SHIFT** with **START/STOP** until none of the LEDs above the '**PROGRAM/PARAMETER**' button is on) you will see:



The LED above the display tells you that this is the **SMPTE** time display (see section '**SMPTE IN GENERAL**'). This is where you set the start and cue points and read off the position the tape machine has reached. Start points are for starting the **SMP 24** at the preset time and thus give the connected sequencers and other devices a start command at the beginning of the piece.

SMP 24 should be in TAPE SYNC mode (set sync parameter 'Cue-Mode' to 00).

The cue points are nothing more than start points during a composition and are set to where something starts (e.g. refrain or middle section).

SMP 24 has to be in CUE MODE (set sync parameter 'Cue-Mode' to 01).

Setting the start point:

Use the second pair of cursor keys to select the time unit you want to change <Hours.Minutes.Seconds.Frames>.

If, for example, you press **CURSOR RIGHT** two display positions start blinking to signalize that any changes apply to this unit. Use the first cursor pair to change the individual settings. You can also enter the start point in real time, for example while synchronizing or writing a time code. To do so, simply store the start point when at the desired location (see below).

Note:

If you want to use finer frame settings, you have to move to level 1 sync parameters 'Start Bits' and 'Cue Bits'. They are located there because this fine editing is needed less often and would create problems with monitor display.

Storing the start point:

As soon as you have decided on and set a start point, you should save it so SMP 24 can synchronize at that point.

To do so, press-and-hold the **SHIFT** key and press **CURSOR LEFT** at the same time.

Recall the start point:

You can recall the stored start point for correction or reminder by pressing both **SHIFT** and **CURSOR DOWN**.

Setting the cue point:

Just as for 'Setting the start point'.

Storing the cue point:

Press **SHIFT** and **CURSOR RIGHT** simultaneously.

Recalling the cue point:

Press **SHIFT** and **CURSOR UP** simultaneously.

TEMPO EDIT

As the **SMFTE** time code is a time setting, you first have to tell **SMP 24** the tempo to use to synchronize the connected devices within the sequence (start and cue points).

So in this mode you set the tempo for synchronization.

Press **PROGRAM/PARAMETER** until the LED above 'Tempo' lights up and the following is displayed (default value):

.01	120
-----	-----

The numbers to the left show the position in the bar; the decimal stands for the measures in a bar.

To the right is the tempo in 'beats per minute' (BPM).

If you now press the **STARTSTOP** key, **SMP 24** starts synchronizing and you will see how on the display the period moves one space right at every beat until the next bar begins and it starts from left again.

You can assign a different tempo to every measure. The number of quarter beats per bar depends on how the sync parameter 'Time Signature' was set.

01 is one measure per bar,
02 is two,
04 (default: 4/4 signature) four measures, etc....

There are several ways of setting the tempo:

1.

Edit the bar beats direct with **SMP 24** cursor.

Use the first cursor pair to move through the **SMP** song by bars and change the tempo setting (**BPM**) with the second pair.

2. 'SONG FILL'

In case you only need one tempo for the whole song or from the last bar position set, we invented the 'SONG FILL' function. This saves you a lot of programing effort.

Set the tempo in the first bar on the first measure (or on a position in the middle of the song from where you want a constant tempo).

Then move to level 3. When there, press **REC/PLAY** and you will be asked 'ASSURE'; this prevents you from accidentally deleting any song already there. If you want to go back on your decision, abort the process by pressing the **SHIFT** key.

Confirm the Song Fill function with the **START/STOP** key; the required tempo is immediately noted for the remainder of the song.

3. TEMPO RECORD

The **SMP** song can also be recorded using by the methods described under Trigger Source in the **SYNC PARAMETER** section. Here is a brief description:

a) First select the trigger source.

b) Adjust the trigger rate to the incoming signal.

c) Select the time measure with Time Measure, i.e. the required measure resolution in a bar (04 sets four tempo units per bar, 08 sets eight, 16 sixteen, and so on).

d) Now get **SMP** record to record with the **REC/PLAY** key; as soon as the first trigger signal arrives the tempo for each measure will be recorded.

Note:

If you activate **SMP 24** with a trigger source while it is synchronizing via **SMPTE**, the first trigger to arrive is automatically memorized as start point.

**4. TEMPO
RECORD CONTINUE**

This function allows you to pause briefly during Tempo Record and to continue again at the point you left off. This can be useful when having to concentrate hard as when tapping in.

You can also record 'ritardandi' or 'accelerandi' at specific points. Tempo Record is activated with **SHIFT** and **REC/PLAY** and starts at the last measure entered.

Tempo Record is finished with **STOP**.

LEVEL 3

THE UTILITIES

On this third and final level you will find various functions that are less often needed but are nonetheless useful.

The first is:

1. SONG FILL

This function is used to copy a tempo to every measure of the SMP song. Song fill was described in detail in the last section, so please refer to 'TEMPO EDIT: 2. SONG FILL' there.

Activating key(s) REC/PLAY

Display:

ASSure

Confirm with START/STOP, abort with SHIFT.

2. COPY TO ALL PROGRAMS

This copies the settings of a MIDI program to all others. Please refer to 'The basic idea' in the second section.

Activating key(s): **SHIFT with CURSOR UP**

Display:

ASSURE

Confirm with **START/STOP**, abort with **SHIFT**

3. RESET 'PRO TWENTYFOUR'

Note:

You should only call this function when using Steinberg's **PRO TWENTYFOUR** on the Centronics interface as otherwise **SMP 24** will crash and you will have to switch off and power up again.

Activating key(s): **PROGRAM/PARAMETER**

When this key is pressed **SMP 24** will relog to **PRO TWENTYFOUR** (e.g. if it was switched off). Also, if the Atari's cursor is crippled, it will reset **PRO TWENTYFOUR** and so solve the problem.

4. PANIC BUTTON

Pressing the panic button sends All-Notes-Off, Omni-Off and reset commands to all four MIDI OUTs on all 16 MIDI channels. The button is often the last resort for dealing with hanging notes, pressed sustain pedals or pitchwheels from out-of-tune synthesizers.

As with all other keyboard functions, you can call this function via the footswitch if assigned to it. Please refer to 'Footswitch Setting' under **SMP** parameters in the second section.

Activating key(s): **CURSOR UP**

The next two functions should be used with great care and caution as they delete **SMP 24** data:

5. MIDI RESET

Use this function to initialize the entire MIDI section. Any settings you made will be deleted and replaced by factory default settings. This can be useful when, for example, you want to configure a new MIDI setup.

Activating key(s): **SHIFT with CURSOR LEFT**

Display:

ASSure

Confirm with START/STOP, abort with SHIFT.

6. SYNC RESET

The same applies here as for 'MIDI RESET' except that it affects the sync and SMP-parameters.

Activating key(s): **SHIFT and CURSOR RIGHT**

Display:

ASSure

Confirm with START/STOP, abort with SHIFT.

7. SAVING AND LOADING SMP 24 DATA

There are two ways of transferring data between **SMP 24** and external storage media:

- a) via the tape interface to/from a tape machine;
- b) via the MIDI interface to/from the computer.

SAVING DATA TO TAPE

1. Connect the **SMPTE OUT** socket with your tape machine's input.
2. Switch off all noise suppression and set levels as usual.
3. Start the tape machine and press **SMP 24** key **SHIFT** and **REC/PLAY**.

SAVE

4. **SMP 24** now transfers all settings to tape, as you can see from the display.
5. When done with transmission, **SMP 24** reports back as if it had just been switched on.

It's wise to record the data two or three times in a row to preclude any transfer or recording errors.

LOADING DATA FROM TAPE

1. Connect your tape machine output to the **SMP 24 SMPTE IN** socket.
2. Set **SMP 24** to receive with **SHIFT** and **PROGRAM/PARAMETER**.

LoAd

3. Switch off all tape machine noise suppression and start the machine.
4. As soon as **SMP 24** recognizes its data a 7 LEDs above the function keys light up and the blocks being loaded are displayed.
5. **SMP 24** logs back on after loading as if it had just been switched on.

Notes:

- If an error message is displayed while loading data **<ERROR>** please check the **SMP24-tape** machine connection (e.g. for faulty cable).
- The reason for this error message or for non-reaction by **SMP 24** is usually an incorrect replay level. Try other levels.
- If you are still having trouble, the tape material might be damaged. In this case, resort to another method of transferring data.
- Please remember that when data is loaded the previous **SMP 24** data are deleted - so save them beforehand.

INITIALIZING SMP

As mentioned in the preface, **SMP 24** is brought up to latest developments (updated) from time to time. These are given to you in a ROM chip which you have to install. After inserting it, it is imperative that you re-initialize **SMP 24** to interface to the new software.

To do so, hold down the **SHIFT** and **START/STOP** keys while powering up **SMP 24**. The display reports **'TEST'**, all data are deleted and initialized to factory default settings!

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ATTENTION:

1. Do not use the flag "RESET ON STOP".
The hook must not appear.
2. In order to leave the Edit-Page of
the TWENTY FOUR you have to use the
UNDO-Key instead of the ESCAPE-Key.

KEY ASSIGNMENT



L E V E L 1	Without SHIFT →	START STOP	CONTINUE	PROGRAM PARAMET.	PROGRAM PARAMETER EDIT		DISPLAY	
	SHIFT →	Next Level	SMPTE WRITE	MIDI SYNC	DE/ACE	STORE SOURCE	COPY	
L E V E L 2	Without SHIFT →	START STOP	RECORD	TIME SONG	TIME EDIT SONG EDIT			
	SHIFT →	Next Level	CONTINUE RECORD		GET START	GET CUE	STORE START	STORE CUE
L E V E L 3	Without SHIFT →	START STOP	FILL SONG	PROTWENTY FOUR	DISPLAY			
	SHIFT →	Next Level				COPY ALL	INT MIDI	INT SYNC